DATA SHEET

DXLink™ HDMI Transmitter Module

AVB-TX-HDMI-DXLINK (FG1010-300)

Overview

The DXLink HDMI Transmitter sends HDMI with HDCP, control and Ethernet up to 100 meters over a single standard twisted pair cable. As part of a complete distribution system, use the DXLink Transmitter with the Enova® DGX DXLink Twisted Pair Input Boards or compatible Enova DVX All-In-One Presentation Switchers. The DXLink Transmitter can also be used as a point-to-point solution with the DXLink HDMI Receiver. The DXLink Transmitter can be powered from any DXLink power source such as the Enova DGX DXLink Twisted Pair Input Board or the Enova DVX-3155HD or DVX-2155HD, and it also includes a local power supply.

Common Applications

The DXLink HDMI Transmitter is ideal for any long distance HDMI run. It is designed to send HDMI and control signals to a remote display across the room, on the other side of the house or to a classroom down the hall. The transmitter has built-in control ports that can be used to control a source and the ICSLan port provides an IP access point.

Features

- **Only One Cable** – Send audio and video while passing control Ethernet and power over one twisted pair cable
- **Send HDMI signals up to 100 meters** – Extend the reach of the HDMI signals far beyond the capabilities of typical HDMI cabling
- **HDMI Port** – Supports HDMI with HDCP, DisplayPort++ or DVI signals using the appropriate breakout cable
- **Standard Twisted Pair Cable** – Save time and effort in installation by leveraging cost effective twisted pair cable, see the Cabling for Success with DXLink with DXLink white paper for more details
- **HDCP Compliant**

Dealer Benefits

- **HDMI/HDCP with the Simplicity of Analog** - Hassle-free plug-and-play operation eliminates the need for time consuming, cumbersome work-around tools to deal with HDCP key constraints and resolution incompatibilities
- **Simplified Design and Installation** - Audio, video, control, Ethernet and power are distributed over one twisted pair cable speeding up installation at remote endpoints
- **Reduce Network Drops** - Centralized Ethernet communication from the Enova DGX can be implemented with the ICSLan port - providing IP access points at every DXLink Transmitter and Receiver

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Customer Benefits

- **Interruption-Free Content** - Exclusive InstaGate Pro® Technology allows audio and video to be switched quickly and easily to every connected display without the difficulties typically associated with HDCP
- **Audio, Video and Control Everywhere** - Compact low-profile design and remote powering capabilities allows the transmitter to be installed in discreet locations out of sight without additional wiring

Additional Features

- **Power Remotely** – Power is carried over on twisted pair cable to simplify installation when used with an Enova DGX Digital Media Switcher or Enova DVX-3155HD and Enova DVX-2155HD All-In-One Presentation Switchers
- **Ethernet Connectivity** – Provides ICSLan Ethernet support at the Transmitter – add Ethernet connectivity to a Touch Panel, plus in a WAP or stream IP audio/video to a Ethernet enabled source device
- **3D Support*** – Pass through the latest video formats including 3D and Deep Color
- **Surround Sound Support –** Pass through high definition surround sound including Dolby Digital, DTS and up to 8-channel L-PCM at 32 kHz, 44.1 kHz, 48 kHz, 96 kHz, 192kHz

*This feature will be available upon release of a future firmware update

Specifications

GENERAL	
Dimensions (HWD)	1” x 8 3/4” x 5 1/5” (2.54 x 22.12 cm x 13.08 cm)
Weight	Approx. 1.1 lb (0.50 kg) Shipping Weight: Approx. 2.20 lb (1.00 kg)
AC Power	100-240 VAC single phase, 50-60 Hz 0.6 A @ 115 VAC max
DXLink Power	TX unit can alternatively have power supplied over twisted pair cable when connected to a DXLink Power sourcing device such as an Enova DGX 16/32 Digital Media Switcher DXLink Twisted Pair Input Board or Enova DVX-3155HD or DVX-2155HD All-In-One Presentation Switcher. When using in conjunction with Enova DGX use the Enova DGX Configuration Tool located at AMX.com/enova to determine the power requirements of a configuration and whether any of the DXLink Transmitters or Receivers should be powered with the local power supply. The configuration tool contains instructions on how to determine power requirements
Power Consumption (Max)	Local 12V supplied: 9 W DXLink power supplied via Enova DGX 16/32 Digital Media Switcher DXLink Twisted Pair Input Board or Enova DVX-3155HD or DVX-2155HD All-In-One Presentation Switcher: 9 W
Power Connector	2.1 mm DC Power Jack
Mounting Options	Compatible with all V Style versatile mounting options including rack, surface or pole
Advanced Configuration Interface*	USB Mini-B Connector
Transport Layer Throughput (Max)	10.2 Gbps
Compatible AMX Products	DXLink HDMI RX, Enova DGX 16 and Enova DGX 32 Digital Media Switchers, Enova DVX-3155HD and Enova DVX-2155HD All-In-One Presentation Switchers
Twisted Pair Cable Type	Cat5e, Cat6/6e, Cat6A, Cat7 of UTP, SF/UTP, S/FTP, and F/UTP varieties **
Twisted Pair Cable Length	Up to 328 ft (100 m)**

MTBF	381,000 hours
Approvals	CE, FCC, UL, cUL, RoHS / WEEE Compliant
Included Accessories	Each HDMI TX ships with a desktop power supply (ENERGY STAR® qualified) with power cord
Optional Accessories	AVB-VSTYLE-SURFACE-MNT, V Style Module Surface Mount (FG1010-722) AVB-VSTYLE-RMK-1U, V Style Module Tray (FG1010-720) AVB-VSTYLE-RMK-FILL-1U, V Style Module Tray w/fill Plates (FG1010-721) AVB-VSTYLE-POLE-MNT, V Style Module Pole Mount (FG1010-723) CC-NIRC, NetLinx IR Emitter Cable (FG10-000-11) IR03, External IR Receiver Module (FG-IR03)

*This feature will be available upon release of a future firmware update

** Cable runs with a minimum specification of ANSI/TIE/EIA 568A-5 and ratings of 250MHz or better may be used with DXLink equipment. However, cable run topology and environmental influences can affect the overall successful distance capabilities of these runs. For successful deployments up to 100 meters without consideration to outside variables, AMX recommends the use of shielded category cable (STP) or Cat6A (or better) versions of unshielded or shielded twisted pair (UTP/STP) for DXLink runs. For more details and helpful cabling information, please contact your AMX representative for a copy of the white paper titled "Cabling for Success with DXLink".

ENVIRONMENTAL	
Temperature (Operating)	32° to 104° F (0° to 40° C)
Temperature (Storage)	-22° to 158° F (-30° to 70° C)
Humidity (Operating)	5% to 85% RH (non-condensing)
Humidity (Storage)	0% to 90% RH (non-condensing)
Power Dissipation (Max)	Local 12V supplied: 31 BTU/hr DXLink power supplied via Enova DGX 16/32 Digital Media Switcher DXLink Twisted Pair Input Board or Enova DVX-3155HD or DVX-2155HD All-In-One Presentation Switcher: 31 BTU/hr

FRONT CONNECTORS	
Advanced Configuration Interface*	USB Mini-B Connector

*This feature will be available upon release of a future firmware update

BACK CONNECTORS	
Local Power	2.1 mm DC Power Jack
HDMI Input	HDMI Type A Female
S/PDIF Digital Audio Input	RCA Jack
ICS LAN/Ethernet Port	RJ-45 Connector, TCP/IP Port (ICS LAN 10/100)
Serial	3.5mm Pluggable Phoenix Terminal Block Bidirectional RS-232 Standard NetLinx Baudrate 1200-115k Parity support Odd/Even/None
IR Control	Port for use with IR03 External IR Receiver Module (Optional Accessory FG-IR03) Port for use with CC-NIRC NetLinx IR Emitter Cable (Optional Accessory FG10-000-11)
USB (HID)*	USB Type B Connector
Analog Stereo Input	3.5mm Mini-Stereo Jack
S/PDIF Digital Audio Input	RCA Jack
DXLink Output	RJ-45

*This feature will be available upon release of a future firmware update

CONTROLS & INDICATORS	
Power Indicator	Green indicates whether or not the module is powered

	on
Video Indicator	Green LED indicates the presence of video signals through the module
Audio Indicator	Green LED indicates the presence of audio signals through the module
IR TX Indicator	Red LED lights during the transmission of IR data the rear IR port
IR RX Indicator	Yellow LED lights during the receipt of IR data via the rear IR port
RS-232 TX Indicator	Red LED shows serial transmit (TX) data activity
RS-232 RX Indicator	Yellow LED shows serial receive (RX) data activity
LINK/ACT	Green LED lights when the Ethernet cable is connected and an active link is established. This LED also blinks when receiving Ethernet data packets
Status	Green LED lights when the Controller is programmed and communicating properly
CEC Indicator*	Not currently supported
USB (HID) Keyboard & Mouse Indicator*	Not currently supported
ID Pushbutton	Places system in NetLinx Device ID assignment mode

*This feature will be available upon release of a future firmware update

HDMI	
Compatible Formats	HDMI , HDCP, DVI
Future Compatible Formats	USB (HID) Keyboard & Mouse *
Signal Type Support	HDMI DVI-D (Single Link with HDMI Cable Adapter) DisplayPort ++ (Input Only, with HDMI Cable Adapter)
Input Connector	HDMI Type A Female
Output Signal Type	DXLink to any of the following: DXLink HDMI RX Module, Enova DGX DXLink Twisted Pair Input Board, Enova DVX-3155HD or Enova DVX-2155HD All-In-One Presentation Switchers
Output Connector	RJ-45
Data Rate (Max)	4.95 Gbps / 6.75 Gbps 6.75 Gbps supported when the DXLink HDMI RX Scaler is in Bypass mode and format is 1080p60 or less
Pixel Clock (Max)	165 MHz / 225 MHz 225 MHz supported when the DXLink HDMI RX Scaler is in Bypass mode and format is 1080p60 or less
Progressive Resolution Support	480p up to 1920x1200 @ 60 Hz (including but not limited to those resolutions shown on Digital Video Resolution Support Appendix)
Interlaced Resolution Support	480i, 576i, 1080i (including but not limited to those resolutions shown on Digital Video Resolution Support Appendix) Note-Reminder: Interlace video supported into the Transmitter, progressive only supported out of the Receiver unless in non-scaling Bypass mode
Deep Color Support*	24-bit, 30-bit, 36-bit 30-bit and 36-bit supported when the DXLink HDMI RX Scaler is in Bypass mode and format is 1080p60 or less
Color Space Support	RGB: 4:4:4 YCbCr 4:4:4: and 4:2:2 Input signal support for YCbCr 4:4:4 and 4:2:2, output color-space is converted to RGB 4:4:4

3D Format Support*	Yes (HDMI Primary Formats) Frame Packing 1080p up to 24Hz Frame Packing 720p up to 50/60Hz Frame Packing 1080i up to 50/60Hz Top-Bottom 1080p up to 24Hz Top-Bottom 720p up to 50/60Hz Side-by-Side Half 1080p up to 50/60Hz Side-by-Side Half 720p up to 50/60Hz 3D supported when the DXLink HDMI RX Scaler is in Bypass mode and format is 1080p60 or less
Audio Format Support	Dolby TrueHD*, Dolby Digital, DTS-HD Master Audio*, DTS, 2 CH through 8 CH L-PCM Dolby Digital and DTS support up to 48kHz, 5.1 channels
Audio Resolution	16 bit to 24 bit
Audio Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 96 kHz, 192kHz
Local Audio Support	Yes for audio insertion
HDCP Support	Yes Supports AMX HDCP InstaGate Pro Technology When used with an AMX Digital Media Switcher the key support is up to 16 sinks per output, independent of source device When used as a single point to point solution the key support is defined by the source device
CEC Support	None
DDC/EDID Support	EDID in point-to-point mode is passed up from the sink device. When used with an AMX Digital Media Switcher, the EDID is read from the switcher and presented to the source through the TX. The EDID is user re-programmable via the switcher See Enova DGX Twisted Pair DXLink Input Board data sheet for list
Input Voltage (Nominal)	1.0 Vpp Differential
Input Re-clocking (CDR)	Yes
Input Equalization	Yes, Adaptive
Propagation Delay (Typ)	5 us

*This feature will be available upon release of a future firmware update

AUDIO (ANALOG & DIGITAL S/PDIF)	
Input Signal Types	Stereo Analog, S/PDIF Video signal must be present to pass Audio
Analog Input Level (Max)	+2 dBu, unbalanced
Analog Input Impedance	10 kΩ
Analog to Digital Conversion	48 kHz Sample Rate, 24-bit
S/PDIF Audio Format Support	Dolby Digital, DTS, 2 CH through 8 CH L-PCM
S/PDIF Resolution	16 to 24 bit
S/PDIF Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 96 kHz
S/PDIF Input Signal Level Range	200 mVpp to 600mVpp terminated
S/PDIF Input Impedance	75 Ω
Analog to Digital Reference Level	+2.5 dBu = 0 dBfs
Input Connectors	3.5mm Mini-Stereo Jack (Analog Stereo) RCA Jack (S/PDIF)

DIGITAL VIDEO RESOLUTION SUPPORT APPENDIX

CEA(RGBHV): 640x480p@59Hz, 720x480p@59Hz, 720(1440)x480i@59Hz, 720x480p@60Hz, 720x480p@119Hz, 720x480p@120Hz, 720x480p@239Hz, 720x480p@240Hz, 720x576p@50Hz, 720(1440)x576i@50Hz, 720x576p@100Hz, 720x576p@200Hz, 768x576p@50Hz, 960x576p@50Hz, 960(1920)x576i@50Hz, 1280x720p@23Hz, 1280x720p@24Hz, 1280x720p@25Hz, 1280x720p@29Hz, 1280x720p@30Hz, 1280x720p@50Hz, 1280x720p@59Hz, 1280x720p@60Hz, 1280x720p@100Hz, 1280x720p@119Hz, 1280x720p@120Hz, 1920x1080p@23Hz, 1920x1080p@24Hz,

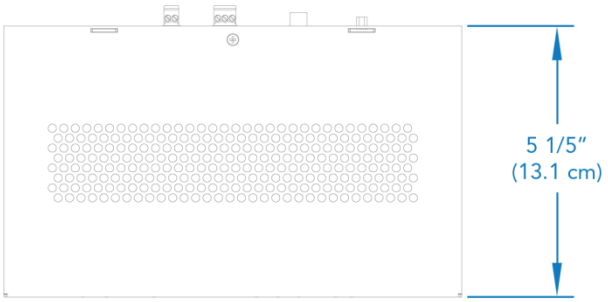
1920x1080i@25Hz, 1920x1080p@25Hz, 1920x1080i@29Hz, 1920x1080p@29Hz, 1920x1080i@30Hz, 1920x1080p@30Hz, 1920x1080p@50Hz, 1920x1080p@59Hz, 1920x1080p@60Hz

CVR (RGBHV): 768x480p@60Hz, 800x600p@60Hz, 800x600p@120Hz, 848x480p@60Hz, 960x600p@60Hz, 1024x576p@60Hz, 1024x640p@60Hz, 1024x768p@60Hz, 1024x768p@120Hz, 1064x600p@60Hz, 1152x720p@60Hz, 1152x864p@60Hz, 1224x768p@60Hz, 1280x720p@60Hz, 1280x768p@60Hz, 1280x768p@120Hz, 1280x800p@120Hz, 1280x960p@60Hz, 1280x1024p@60Hz, 1360x768p@60Hz, 1360x768p@120Hz, 1400x1050p@60Hz, 1440x900p@60Hz, 1536x960p@60Hz, 1600x1000p@60Hz, 1600x1200p@60Hz, 1680x1050p@60Hz, 1704x960p@60Hz, 1728x1080p@60Hz, 1800x1350p@60Hz, 1864x1050p@60Hz, 1920x1080p@60Hz, 1920x1200p@60Hz

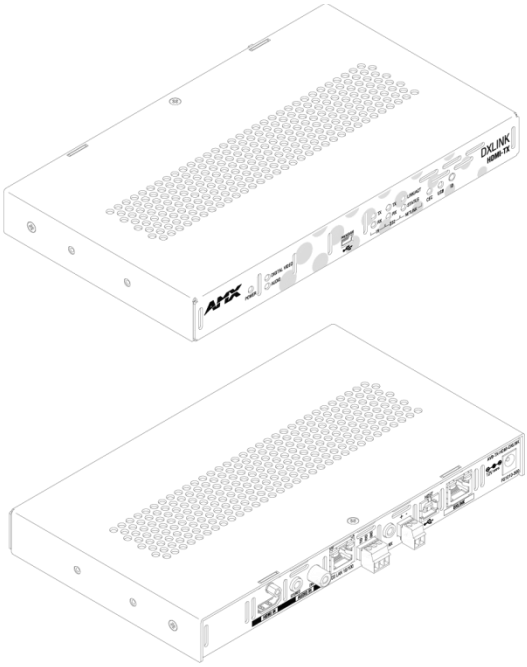
CVT (RGBHV): 640x360p@85Hz, 640x400p@75Hz, 640x400p@85Hz, 640x480p@75Hz, 640x480p@85Hz, 768x480p@60Hz, 768x480p@75Hz, 768x480p@85Hz, 800x600p@50Hz, 800x600p@60Hz, 800x600p@75Hz, 800x600p@85Hz, 848x480p@50Hz, 848x480p@60Hz, 848x480p@75Hz, 848x480p@85Hz, 960x600p@50Hz, 960x600p@60Hz, 960x600p@75Hz, 960x600p@85Hz, 1024x576p@50Hz, 1024x576p@60Hz, 1024x576p@75Hz, 1024x576p@85Hz, 1024x640p@50Hz, 1024x640p@60Hz, 1024x640p@75Hz, 1024x640p@85Hz, 1024x768p@50Hz, 1024x768p@60Hz, 1024x768p@75Hz, 1024x768p@85Hz, 1064x600p@50Hz, 1064x600p@60Hz, 1064x600p@75Hz, 1064x600p@85Hz, 1152x720p@50Hz, 1152x720p@60Hz, 1152x720p@75Hz, 1152x720p@85Hz, 1152x864p@60Hz, 1224x768p@50Hz, 1224x768p@60Hz, 1224x768p@75Hz, 1224x768p@85Hz, 1280x720p@50Hz, 1280x720p@60Hz, 1280x720p@75Hz, 1280x720p@85Hz, 1280x768p@50Hz, 1280x768p@60Hz, 1280x768p@75Hz, 1280x768p@85Hz, 1280x800p@50Hz, 1280x800p@75Hz, 1280x800p@85Hz, 1280x960p@50Hz, 1280x960p@60Hz, 1280x960p@75Hz, 1280x960p@85Hz, 1280x1024p@50Hz, 1280x1024p@60Hz, 1280x1024p@75Hz, 1280x1024p@85Hz, 1360x768p@50Hz, 1360x768p@60Hz, 1360x768p@75Hz, 1360x768p@85Hz, 1400x1050p@50Hz, 1400x1050p@60Hz, 1400x1050p@75Hz, 1440x900p@60Hz, 1440x900p@75Hz, 1440x900p@85Hz, 1536x960p@50Hz, 1536x960p@60Hz, 1536x960p@75Hz, 1600x1000p@50Hz, 1600x1000p@60Hz, 1600x1200p@50Hz, 1600x1200p@60Hz, 1680x1050p@50Hz, 1680x1050p@60Hz, 1704x960p@50Hz, 1704x960p@60Hz, 1728x1080p@50Hz, 1728x1080p@60Hz, 1864x1050p@50Hz, 1864x1050p@60Hz, 1920x1080p@50Hz, 1920x1200p@50Hz

DMR(RGBHV): 1280x800p@60Hz, 1366x768p@60Hz, 1600x900p@60Hz

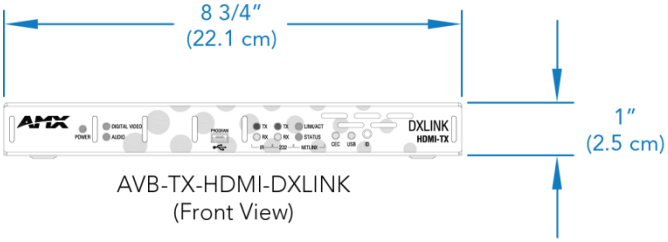
DMT(RGBHV): 640x350p@85Hz, 640x400p@85Hz, 640x480p@60Hz, 640x480p@72Hz, 640x480p@75Hz, 640x480p@85Hz, 720x400p@85Hz, 800x600p@56Hz, 800x600p@60Hz, 800x600p@72Hz, 800x600p@75Hz, 800x600p@85Hz, 848x480p@60Hz, 1024x768i@43Hz, 1024x768p@60Hz, 1024x768p@70Hz, 1024x768p@75Hz, 1024x768p@85Hz, 1152x864p@70Hz, 1152x864p@75Hz, 1152x864p@85Hz, 1280x800p@60Hz, 1280x960p@60Hz, 1280x960p@75Hz, 1280x960p@85Hz, 1280x1024i@43Hz, 1280x1024p@60Hz, 1280x1024p@75Hz, 1280x1024p@85Hz, 1360x768p@60Hz, 1366x768p@60Hz, 1600x1200i@48Hz, 1600x1200p@60Hz



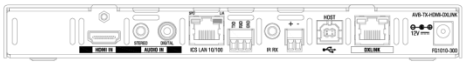
AVB-TX-HDMI-DXLINK
(Top View)



AVB-TX-HDMI-DXLINK
(Isometric Views)



AVB-TX-HDMI-DXLINK
(Front View)



AVB-TX-HDMI-DXLINK
(Back View)

AVB-TX-HDMI-DXLINK
(Right View)

About AMX

AMX hardware and software solutions simplify the implementation, maintenance, and use of technology to create effective environments. With the increasing number of technologies and operating platforms at work and home, AMX solves the complexity of managing this technology with reliable, consistent and scalable systems. Our award-winning products span control and automation, system-wide switching and audio/video signal distribution, digital signage and technology management. They are implemented worldwide in conference rooms, homes, classrooms, network operation / command centers, hotels, entertainment venues, broadcast facilities, and more. ©2012 AMX. All rights reserved.

Specifications subject to change. Revised 29-Aug-12.

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